

A Preliminary Study on Handling Uncertainty in Indicator-Based Multiobjective Optimization

Submitted by Matthieu Basseur on Thu, 02/12/2015 - 13:57

Titre	A Preliminary Study on Handling Uncertainty in Indicator-Based Multiobjective Optimization
Type de publication	Communication
Type	Communication avec actes dans un congrès
Année	2006
Langue	Anglais
Titre du colloque	Applications of Evolutionary Computing (EvoWorkshops 2006)
Volume	3907
Auteur	Basseur, Matthieu [1], Zitzler, Eckart [2]
Editeur	Springer Berlin Heidelberg
Ville	Berlin, Heidelberg
ISBN	978-3-540-33237-4
Résumé en anglais	<p>Real-world optimization problems are often subject to uncertainties, which can arise regarding stochastic model parameters, objective functions and decision variables. These uncertainties can take different forms in terms of distribution, bound and central tendency.</p> <p>In the multiobjective context, several studies have been proposed to take uncertainty into account, and most of them propose an extension of Pareto dominance to the stochastic case. In this paper, we pursue a slightly different approach where the optimization goal is defined in terms of a quality indicator, i.e., an objective function on the set of Pareto set approximations. We consider the scenario that each solution is inherently associated with a probability distribution over the objective space, without assuming a 'true' objective vector per solution. We propose different algorithms which optimize the quality indicator, and preliminary simulation results indicate advantages over existing methods such as averaging, especially with many objective functions.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua7993 [3]
DOI	10.1007/11732242_71 [4]
Lien vers le document en ligne	http://link.springer.com/chapter/10.1007%2F11732242_71 [5]

Liens

- [1] <http://okina.univ-angers.fr/matthieu.basseur/publications>
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=11644](http://okina.univ-angers.fr/publications?f[author]=11644)
- [3] <http://okina.univ-angers.fr/publications/ua7993>
- [4] http://dx.doi.org/10.1007/11732242_71

[5] http://link.springer.com/chapter/10.1007%2F11732242_71

Publié sur *Okina* (<http://okina.univ-angers.fr>)